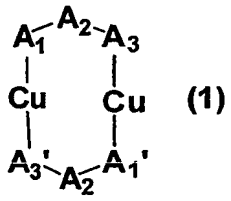
CLAIMS

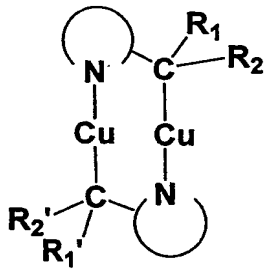
1. A luminescent device which uses as a luminescent material a binuclear copper coordination compound having a partial structure represented by the following general formula (1):



(1)

wherein Cu is a monovalent copper ion; and each of A_1 to A_3 and A_1' to A_3' is selected from the group consisting of a nitrogen atom, a carbon atom, and a phosphorus atom.

2. The luminescent device according to claim 1, wherein the copper coordination compound is represented by the following general formula (2):

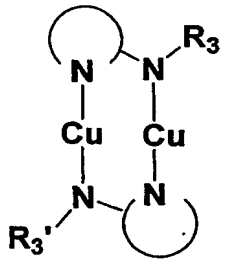


(2)

wherein each of R_1, R_2, R_1', and R_2' is a branched or straight alkyl group in which a hydrogen atom is optionally substituted by a halogen and which has 10 or less carbon atoms, an aromatic ring group optionally having a substituent, a trimethylsilyl

group, a dialkylamino group which is optionally substituted, or a diarylamino group; each of R_1, R_2, R_1' and R_2' may be the same or different; and N is an imine group on a heteroaromatic ring, and the heteroaromatic ring is selected from the group consisting of a pyridine ring, a pyridazine ring, a pyrazine ring, a pyrimidine ring, a quinoline ring, an isoquinoline ring, a pyrazole ring, an azaquinoline ring, and an azaisoquinoline ring, and these rings may have a substituent.

3. The luminescent device according to claim 1, wherein the copper coordination compound is represented by the following general formula (3)

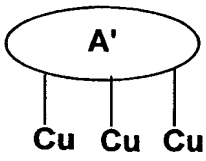


(3)

wherein each of R_3 and R_3' is a branched or straight alkyl group in which a hydrogen atom is optionally substituted with a halogen and which has 10 or less carbon atoms, an aromatic ring group optionally having a substituent, and a trimethylsilyl group; each of R_3 and R_3' may be the same or different; and N is an imine group on a heteroaromatic ring, and the heteroaromatic ring is selected from the group

consisting of a pyridine ring, a pyridazine ring, a pyrazine ring, a pyrimidine ring, a quinoline ring, an isoquinoline ring, a pyrazole ring, an azaquinoline ring, and an azaisoquinoline ring, and these rings may have a substituent.

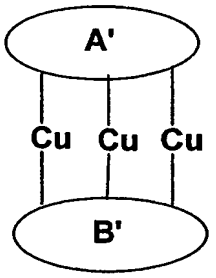
4. A luminescent device which uses as a luminescent material a trinuclear copper coordination compound having a partial structure represented by the following general formula (4):



(4)

wherein Cu is a copper ion and A' is a tridentate ligand.

5. The luminescent device according to claim 4, wherein the copper coordination compound has a partial structure represented by the following general formula (5):



(5)

wherein B' is a tridentate ligand and may be the same as or different from A'.

6. The luminescent device according to claim 1, wherein the copper coordination compound has a partial structure represented by the following general formula (6):

(6)

7. The luminescent device according to claim 4, wherein the copper coordination compound has a partial structure represented by the following general formula (6)

(6)

8. The luminescent device according to claim 1, wherein the distance between copper atoms of the copper coordination compound is 3.2 Å or less.

9. The luminescent device according to claim 4, wherein the distance between copper atoms of the copper coordination compound is 3.2 Å or less.

10. The luminescent device according to claim 1, wherein copper of the copper coordination compound is a monovalent ion.

11. The luminescent device according to claim 4, wherein copper of the copper coordination compound is a monovalent ion.

12. The luminescent device according to claim

1, wherein a luminescent layer contains a part of 100% of the copper coordination compound.

13. The luminescent device according to claim 4, wherein a luminescent layer contains a part of 100% of the copper coordination compound.